

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A range sensing system comprising:
 - at least one energy source adapted to emit energy capable of reflection by one or more targets within a region, and
 - at least one receiver having a plurality of sensing elements adapted configured to sense the reflection of emitted energy from said at least one a plurality of targets within said region, and
 - an activation system associated with said at least one energy source, said activation system being adapted to activate and deactivate an energy source in a cyclic pattern with a selected source frequency, and
 - a shielding system associated with said at least one receiver, said shielding system being adapted configured to block the sensing of reflected energy from[[a]] the plurality of targets by said at least one [[a]] receiver, said shielding system being activated and deactivated in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequencies being selected from different frequency values, and
 - wherein an output signal of each sensing element of said at least one receiver generates an output signal with a frequency substantially equal to the frequency difference between said receiver frequency and said source frequency, and said output signal is compared with a reference signal to determine a range value for a selected each of the sensing elements of target of the said at least one receiver, where phase differences between the receiver said output signal

and the said reference signal indicate a range value, and wherein the system indicates from the range values of the sensing elements a range value for each target of the plurality of targets sensed by the at least one receiver, substantially at the same time.

2. Cancelled.

3. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the source frequency used is phase locked with respect to the receiver frequency used.

4. (Previously Presented) A range sensing system as claimed in Claim 1 wherein a single signal generator generates a receiver frequency which is phase locked with respect to a source frequency generated by the same signal generator.

5. Cancelled.

6. (Previously Presented) A range sensing system as claimed in Claim 1 wherein said at least one energy source is activated and said at least one receiver is shielded using a plurality of paired source and receiver frequencies.

7. (Currently Amended) A range sensing system as claimed in Claim 6 wherein said at least one [[a]] receiver is adapted to emit a plurality of output signals in response to the use of said plurality of paired sets of source and received frequencies.

8. (Previously Presented) A range sensing system as claimed in Claim 1 which includes a single energy source only with a diffuse emission pattern.

9. (Previously Presented) A range sensing system as claimed in Claim 1 wherein an energy source is formed from a light emitting diode.

10. (Previously Presented) A range sensing system as claimed in Claim 1 wherein an energy source emits visible light energy.

11. (Currently Amended) A range sensing system as claimed in Claim 10 wherein a sensing element of the receiver is formed from a light sensitive transducer.

12. (Currently Amended) A range sensing system as claimed in Claim 11 wherein the receiver is formed from or implemented by a charged coupled device.

13. (Currently Amended) A range sensing system as claimed in Claim 1 wherein the range sensing system includes a single receiver having the plurality of sensing elements only.

14. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the activation system controls the supply of power to an energy source.

15. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the shielding system is implemented through a physical barrier.

16. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the shielding system is implemented through an enable signal applied to operate a receiver.

17. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the reference signal is generated by mixing the receiver frequency and the source frequency.

18. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the reference signal is generated through a calibration procedure.

19. (Currently Amended) A range sensing system as claimed in Claim 1 wherein the range sensing system includes a processing means adapted to compare an output signal of the said at least one receiver to a reference signal.

20. (Original) A range sensing system as claimed in claim 19 wherein the processing means is a computer system.

21. (Currently Amended) A method of calculating [[a]] range values for a plurality of ~~to a targets~~ within a region substantially at the same time, comprising:

(i) activating an energy source using an activation system, said energy source being activated and deactivated in a cyclic pattern with a selected source frequency, and

5 (ii) operating a receiver having a plurality of sensing elements configured to sense the reflection of emitted energy from at least one of said plurality of targets within said region, using a shielding system, said shielding system being adapted configured to block the sensing of reflected energy from [[a]] said plurality of targets in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequency being selected from different frequency values, and

10 (iii) comparing a receiver an output signal of each sensing element of said at least one receiver having a frequency substantially equal to the frequency difference between said receiver frequency and said source frequency with a reference signal to determine a range value for each sensing element of said at least one receiver said target, where phase differences between the receiver said output signal and said reference signal indicate a range value,

15 (iv) determining from the range values of the sensing elements a range value for each target of the plurality of targets sensed by the receiver, substantially at the same time.

22. (Original) A method of calculating a range to a target within a region as claimed in claim 21 wherein the energy source is activated and the receiver is shielded using a plurality of paired source and receiver frequencies.

23. Cancelled.

24. Cancelled.